REMARKS

Entry of the foregoing and reexamination and reconsideration of the subject application, as amended, pursuant to and consistent with 37 C.F.R. § 1.112, are respectfully requested in light of the remarks which follow.

Claims 1-18, 20-24, 27, and 28 are currently pending. No claims are presently amended.

Claim Rejections - 35 USC § 103

Claim 1 stands rejected under 35 U.S.C. § 103(a) as purportedly obvious over Southern *et al.* (WO95/04160) in view of Smith, L. M. (*Nature*, 349: 812-813 (1991)) and Withers *et al.* (U.S. Patent No. 5,716,812).

Claims 2-18 and 20-26 stand rejected under 35 U.S.C. § 103(a) as purportedly obvious over Southern *et al.* (W095/04160) in view of Ness *et al.* (U.S. Patent No. 6,027,890), Alberts (Molecular Biology of the Cell, 1994, page 298), Smith, L. M. (*Nature*, 349: 812-813 (1991)) and Withers *et al.* (U.S. Patent No. 5,716,812).

As stated in the outstanding Office Action, Southern *et al.* purportedly discloses cleaving each fragment in a mass spectrometer to release its mass label, and determining each mass label by mass spectroscopy to identify the fragment, but does not teach cleavage via collision. Withers *et al.* purportedly uses collision cleavage to break the ester bond between the mass label and the fragment but does not break bonds within the fragment (Column 19, lines 38-45), and thus purportedly provides motivation to combine the references. Further, the Office Action states that it would have been obvious to the skilled artisan to apply the

collision cleavage taught by Withers *et al.* to the mass label cleavage of Southern *et al.* for the expected benefit of mass label-cleavage without damaging the fragment as taught by Withers *et al.* Applicants respectfully traverse.

In order to establish a case of *prima facie* obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation to modify the reference or combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the prior art reference(s) must teach or suggest all of the claim limitations. *See* M.P.E.P. §2142. Applicants respectfully submit that these criteria have not been met in the present Office Action.

Firstly, applicants submit that there is no suggestion or motivation to modify or combine Withers *et al.*, Southern *et al.*, and Smith. Withers *et al.* describe the use of collision cleavage to break an ester-linkage between a label and a peptide, while not breaking a peptide bond. At column 19, lines 35-39, Withers *et al.* state that "[t]he ester linkage between the 2FGlu label and the peptide is one of the more labile linkages present, readily susceptible to homolytic cleavage. Indeed, the collision conditions employed were sufficient to break the ester bond but not generally the peptide bonds." Withers *et al.* do not utilize collision cleavage to cleave a label off of a nucleic acid fragment. The observation by Withers *et al.* that collision cleavage did not break a peptide bond does not indicate that it would not break a phosphodiester linkage of a nucleic acid. Southern *et al.* relate to the characterization of nucleic acids, not peptides. Considering that Withers *et al.* relate to the collision cleavage to break an ester-linkage between a label and a peptide, and that Southern

et al. relate to characterization of a nucleic acid, there is no motivation to combine Withers *et al.* with Southern *et al.* Smith relates to the use of capillary electrophoresis and does not provide motivation to combine Southern *et al.*, Smith, and Withers *et al.*

Secondly, applicants submit that there is no reasonable expectation of success. As stated above, Withers *et al.* describe the use of collision cleavage to break an ester-linkage between a label and a peptide. A nucleic acid sequence includes phosphodiester bonds. Withers *et al.* does not use collision cleavage to break ester bonds without breaking phosphodiester bonds. There is no reasonable expectation that combining Withers *et al.* with Southern *et al.* to use collision cleavage to cleave the label while not cleaving the nucleic acid fragment, containing phosphodiester bonds, would be successful.

Secondary references Ness *et al.* and Alberts do not provide additional information to overcome the deficiencies of the other references described above.

Thus, in light of the above remarks, Applicants submit that Claims 1 is not unpatentable over Southern *et al.* in view of Smith, and Withers *et al.*, and that claims 2-18 and 20-26 are not unpatentable over Southern *et al.* in view of Ness *et al.*, Alberts, Smith, and Withers *et al.* There is no suggestion or motivation to modify or combine the reference or combine reference teachings, and there is not a reasonable expectation of success. Applicants respectfully request that this rejection be withdrawn.

Double Patenting

Claims 1-18, 20-24 and 27-28 stand rejected under the judicially created doctrine of obviousness-type double patenting as purportedly unpatentable over claims 1-16 of U.S. Patent No. 6,270,976, and over claims 33-45 of U.S. Patent No. 6,287,780. Although applicants disagree with the double patenting rejection, and without acquiescing in the rejections, terminal disclaimers over U.S. Patent No. 6,270,976 and U.S. Patent No. 6,287,780 are attached in an effort to expedite prosecution.

Claims 1-18, 20-24 and 27-28 stand rejected under the judicially created doctrine of obviousness-type double patenting as purportedly unpatentable over claims 63-80 of U.S. Patent Application No. 10/221,666. Applicants request that this rejection be held in abeyance.

As of the date of this amendment, neither this application nor Application No. 10/221,666 has resulted in the allowance or issuance of any claims. Applicant reserves the right, without prejudice, to take any corrective action deemed necessary at some future time. Should the claims in copending Application No. 10/221,666 be allowed with the only remaining rejection in the present application being the double patenting rejection, Applicant will file a Terminal Disclaimer in the present application if appropriate.

CONCLUSION

Based on the foregoing, this application is believed to be in condition for allowance. A Notice to that effect is respectfully solicited. However, if any issues remain outstanding

after consideration of this Amendment and Reply, the Examiner is respectfully requested to contact the undersigned so that prosecution may be expedited.

In the event any further fees are due to maintain pendency of this application, the Examiner is authorized to charge such fees to Deposit Account No. 02-4800.

Respectfully submitted,

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Date: June 4, 2004

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I hereby certify that this correspondence is being filed by facsimile transmission to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA. 22313-1450, to facsimile number 703.872.9306 on this date, June 4, 2004.

by Sandra B. Paye
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